

Vermont Mental Health Performance Indicator Project
Agency of Human Services, Department of Health, Division of Mental Health
Weeks Building, 103 South Main Street, Waterbury, VT 05671-1601

MEMORANDUM

TO: Vermont Mental Health Performance Indicator Project
Advisory Group and Interested Parties

FROM: John Pandiani and Stephen Morabito

DATE: October 15, 2004

RE: Emergency Room Asthma Diagnosis for CMHC Service Recipients

This week's PIP continues our examination of the health status and health care utilization for community mental health services recipients¹ and relates specifically to a 2002 PIP report that found significantly elevated rate of inpatient care for asthma for CRT clients (compared to the general population²). This report focuses on emergency room (ER) admissions with a primary asthma diagnosis for individuals who were on the caseload of four CMHC programs during January through December 2003. These programs include Community Rehabilitation and Treatment programs for adults with serious mental illness, Adult Outpatient programs for individuals experiencing emotional, behavioral, or adjustment problems, Substance Abuse programs, and Children's Services programs. For each of these four populations, the proportion of CMHC service recipients with an ER admission with a primary asthma diagnosis during January 2001 through December 2002 is reported.

Anonymous extracts from two databases were used in this analysis. The Division of Mental Health CMHC Monthly service reports provided basic demographic and service information about mental health service recipients. The Hospital Discharge Data Set maintained by the Department of Health provided basic demographic and clinical information about all episodes of ER care with asthma listed as the primary diagnosis in general hospitals in Vermont, New Hampshire, Massachusetts, and neighboring counties of New York State.

Because these data sets do not include unique person identifiers, Probabilistic Population Estimation (PPE) was used to determine the proportion of individuals served by each CMHC program who were also represented in the ER/Asthma data set during the study period. PPE is a statistical data-mining tool that measures the number of people represented in data sets that do not share unique person identifiers. PPE reports how many people are represented in and across data sets, but does not reveal who the people are. This analysis provides the information necessary to determine the rate of ER/Asthma treatment for CMHC service recipients as well as for the larger population of the State of Vermont.

As you will see, there was substantial variation among CMHC programs in rates of ER/Asthma treatment during the study period, but ER/Asthma treatment rates for every program were significantly higher than the rate for the general population of the state of Vermont. CRT service

recipients were almost eight times as likely as other adult residents of Vermont to have ER/Asthma treatment, Substance Abuse and Adult Outpatient service recipients were 3 to 4 times as likely, and children's service recipients were twice as likely as other young Vermont residents to have ER/Asthma treatment.

There were no statistically significant differences in ER/Asthma utilization rates between male and female service recipients in any of the CMHC caseloads. Differences among age groups in Children's Services and CRT caseloads were not statistically significant, but older substance Abuse service recipients (age 50+) had significantly higher utilization rates than others, and older Adult Outpatient service recipients had significantly higher utilization rates than young (18-34) service recipients but were not significantly more likely to received ER/Asthma services than adults in the 35-49 age group.

One question left unanswered by this analysis is whether the elevated risk of ER/Asthma treatment for CMHC service recipients is a function of a greater prevalence of asthma among CMHC service recipients, a function of greater utilization of ER services by CMHC service recipients, or a combination of these two factors.

We will appreciate your interpretation of these findings, your questions, and your suggestions for further analysis of these data. As always, you can reach us at pip@vdh.state.vt.us or 802-241-2638.

¹ Access to Medical Care - Part I (7/16/1997)

<http://www.ddmhs.state.vt.us/img/docPDF.gif>

Access to Medical Care - Part II (7/23/1997)

<http://www.ddmhs.state.vt.us/docs/pips/1997/pip072397.pdf>

Utilization of Emergency Room Services by CRT Clients (10/1/1997)

<http://www.ddmhs.state.vt.us/docs/pips/1997/pip100197.pdf>

Utilization of Emergency Room Services by CRT Clients: Part II (10/8/1997)

<http://www.ddmhs.state.vt.us/docs/pips/1997/pip100897.pdf>

Relative Risk of Mortality: Adults with Severe and Persistent Mental Illness (12/15/2000)

<http://www.ddmhs.state.vt.us/docs/pips/2000/pip121500.pdf>

Consumers Linked to Primary Health Care Services (7/20/2001)

<http://www.ddmhs.state.vt.us/docs/pips/2001/pip072001.pdf>

Another View of Consumers Linked to Primary Health Care Services (8/3/2001)

<http://www.ddmhs.state.vt.us/docs/pips/2001/pip080301.pdf>

Rates of Mortality After Inpatient Behavioral Health Care in Different Settings (8/24/2001)

<http://www.ddmhs.state.vt.us/docs/pips/2001/pip082401.pdf>

Mortality and Cause of Death for CRT clients (1/11/2002)

<http://www.ddmhs.state.vt.us/docs/pips/2002/pip011102.pdf>

Mortality and Cause of Death for Substance Abuse and CRT Clients (3/8/2002)

<http://www.ddmhs.state.vt.us/docs/pips/2002/pip030802.pdf>

Regional Variation in CRT Mortality Rates (10/4/2002)

<http://www.ddmhs.state.vt.us/docs/pips/2002/pip100402.pdf>

Diabetes and Asthma in CRT Caseload (10/18/2002)

<http://www.ddmhs.state.vt.us/docs/pips/2002/pip101802.pdf>

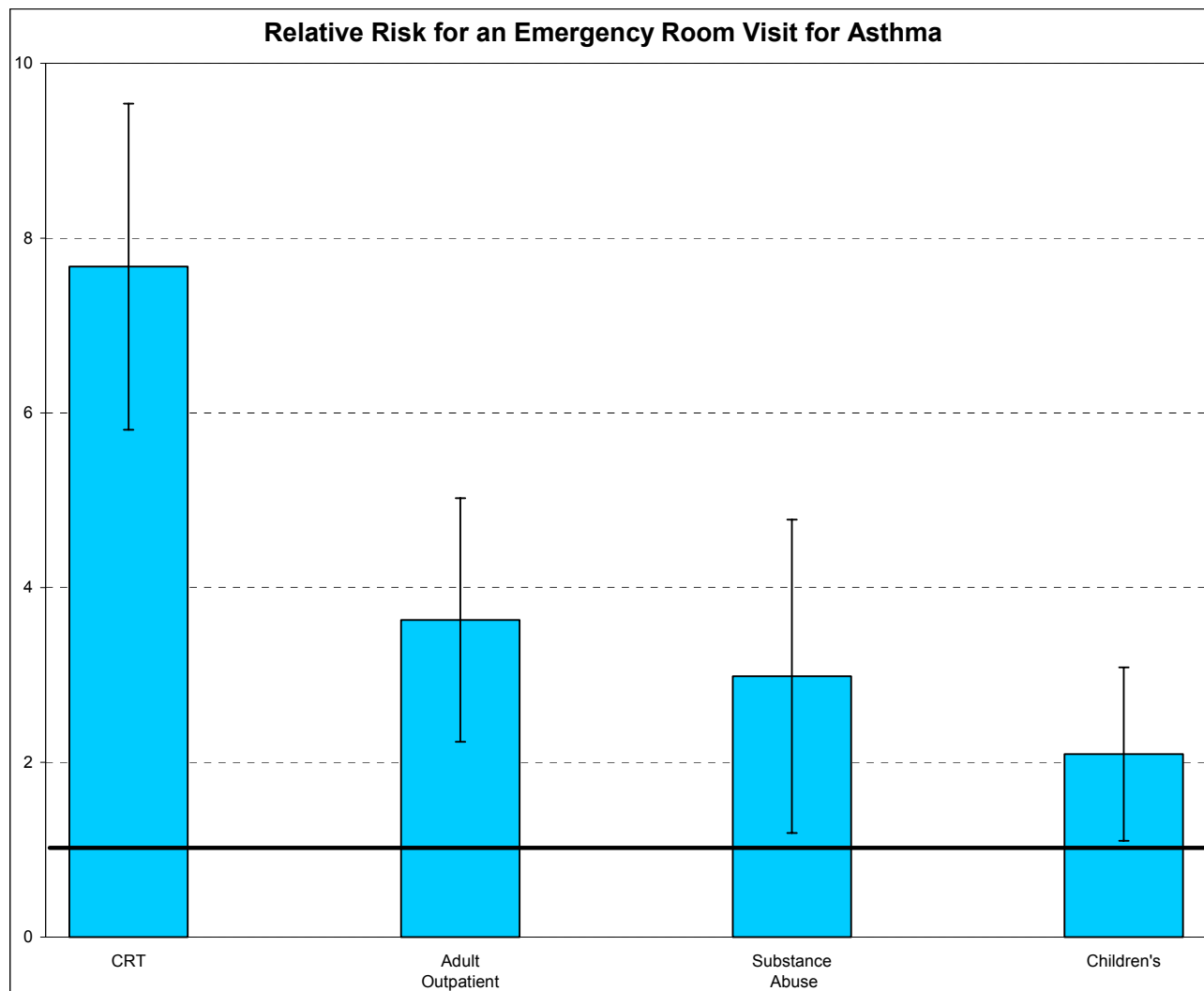
Relative Risk of Cancer Diagnosis for CRT Clients (9/10/2004)

<http://www.ddmhs.state.vt.us/docs/pips/2004/pip091004.pdf>

² Diabetes and Asthma in CRT Caseload (10/18/2002)

<http://www.ddmhs.state.vt.us/docs/pips/2002/pip101802.pdf>

Mental Health Services Clients 2003 With an Emergency Room Visit for Asthma in 2001 and 2002

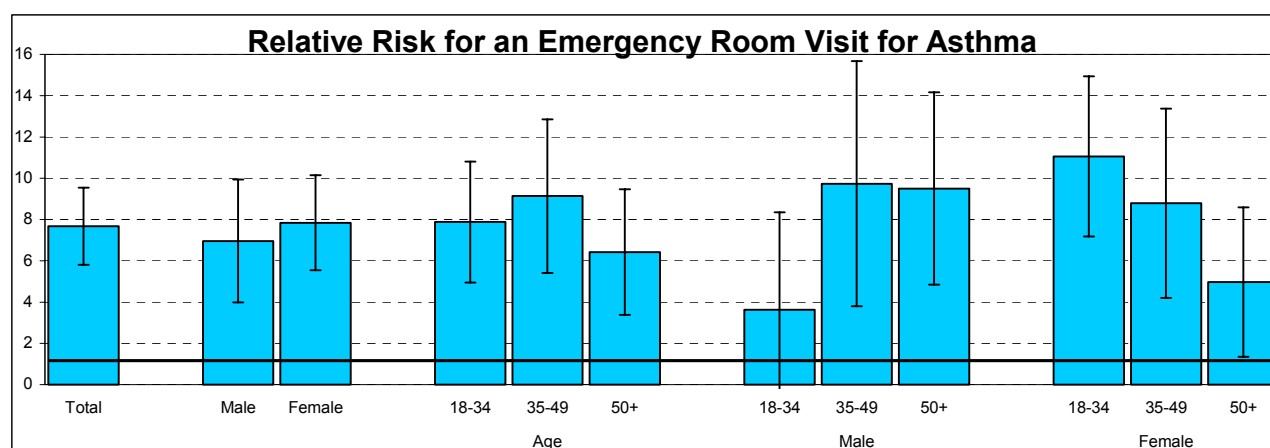
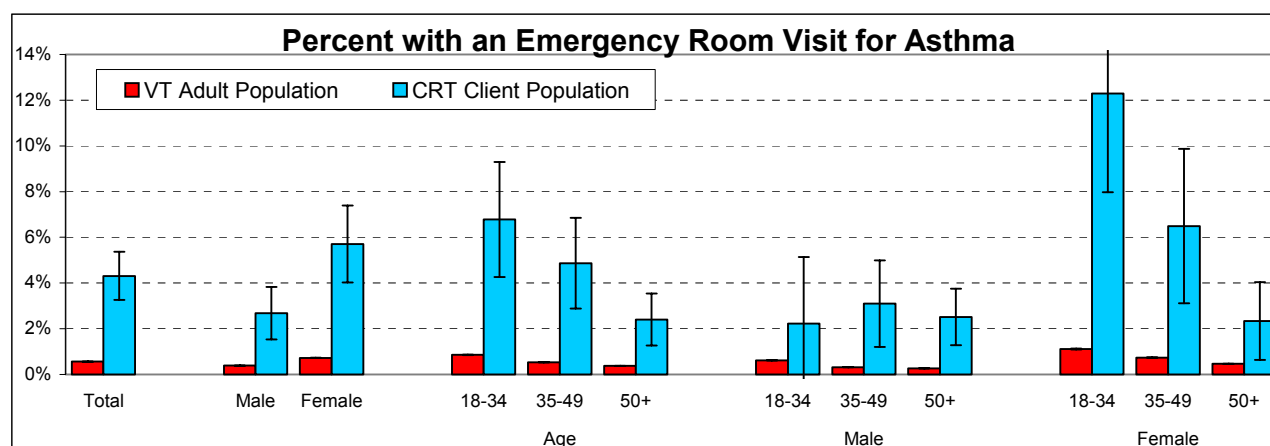


Program	Total Asthma			Mental Health Services			Relative Risk
	Asthma	VT Population 2002	Rate	Asthma	MH Population 2003	Rate	
CRT	2,680 ± 21	476,998	0.6% ± 0.0%	136 ± 33	3,146 ± 24	4.3% ± 1.0%	7.7 ± 1.9
Adult Outpatient	2,680 ± 21	476,998	0.6% ± 0.0%	141 ± 54	6,928 ± 52	2.0% ± 0.8%	3.6 ± 1.4
Substance Abuse	2,680 ± 21	476,998	0.6% ± 0.0%	74 ± 45	4,420 ± 45	1.7% ± 1.0%	3.0 ± 1.8
Children's	1,041 ± 15	139,594	0.7% ± 0.0%	130 ± 62	8,331 ± 139	1.6% ± 0.7%	2.1 ± 1.0

Analyses are based on Monthly Service Reports provided by community mental health centers and the Vermont Uniform Hospital Discharge Data Set. Hospital discharge data were supplied by the Vermont Association of Hospitals and Health Systems-Network Services Organization and the Vermont Department of Banking, Insurance, Securities and Health Care Administration. These organizations disclaim responsibility for analyses, interpretations and conclusions, and BISHCA disclaims responsibility for errors in the data.

Because these data sets do not share unique person identifiers, Probabilistic Population Estimation was used to determine caseload size and overlap (with 95% confidence intervals). Relative risk was derived by dividing the rate of asthma diagnoses among service recipients by the rate of asthma diagnoses in the general population. A relative risk of "1" would mean there is no difference between the two rates. A relative risk of "2" would mean that service recipients are twice as likely as other residents to have an asthma diagnosis. A relative risk of "0.5" would mean that service recipients are half as likely as other residents to have an asthma diagnosis.

Community Rehab. Treatment Mental Health Services Clients 2003 With an Emergency Room Visit for Asthma in 2001 and 2002

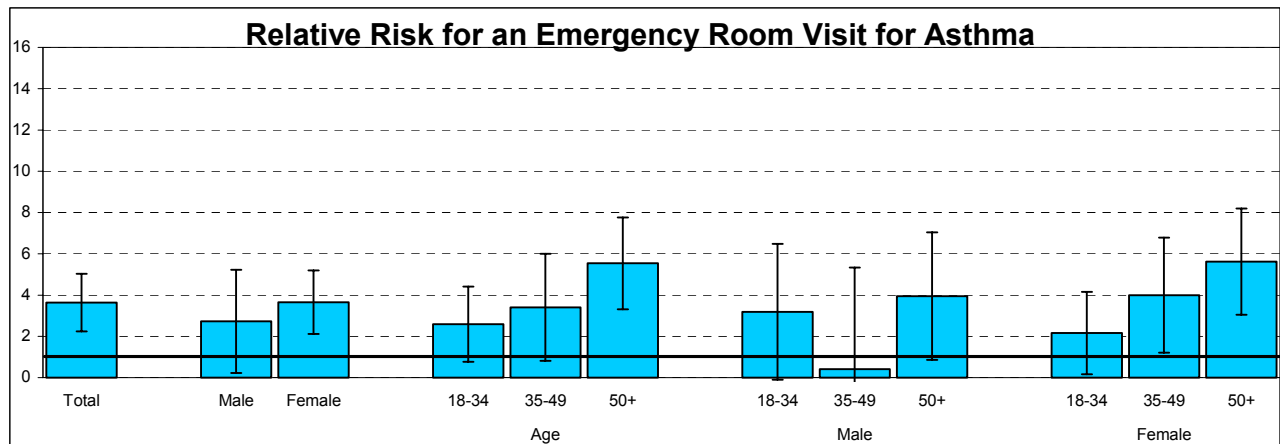
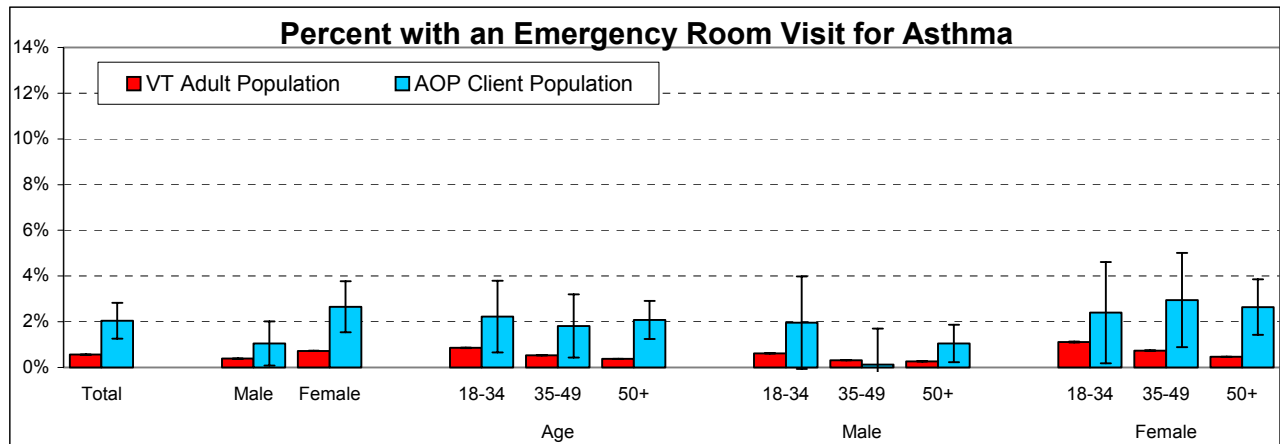


	Total Asthma				Community Rehabilitation Treatment				Relative Risk
	Asthma	Population	2002	Rate	Asthma	MH Population	2003	Rate	
Total	2,680 ± 21	476,998	0.6% ± 0.00%		136 ± 33	3,146 ± 24	4.3% ± 1.0%		7.7 ± 1.9
Male	888 ± 10	230,553	0.4% ± 0.00%		39 ± 17	1,449 ± 16	2.7% ± 1.1%		7.0 ± 3.0
Female	1,793 ± 19	246,445	0.7% ± 0.01%		97 ± 28	1,697 ± 18	5.7% ± 1.7%		7.8 ± 2.3
Age	18-34	1,157 ± 16	134,422	0.9% ± 0.01%	46 ± 17	674 ± 9	6.8% ± 2.5%		7.9 ± 2.9
	35-49	810 ± 12	151,937	0.5% ± 0.01%	60 ± 25	1,239 ± 17	4.9% ± 2.0%		9.1 ± 3.7
	50+	714 ± 7	190,639	0.4% ± 0.00%	30 ± 14	1,233 ± 14	2.4% ± 1.1%		6.4 ± 3.0
Male	18-34	417 ± 8	67,897	0.6% ± 0.01%	8 ± 11	369 ± 7	2.2% ± 2.9%		3.6 ± 4.7
	35-49	237 ± 5	74,325	0.3% ± 0.01%	18 ± 11	593 ± 12	3.1% ± 1.9%		9.7 ± 5.9
	50+	234 ± 3	88,331	0.3% ± 0.00%	12 ± 6	487 ± 8	2.5% ± 1.2%		9.5 ± 4.7
Female	18-34	739 ± 14	66,525	1.1% ± 0.02%	37 ± 13	305 ± 6	12.3% ± 4.3%		11.1 ± 3.9
	35-49	573 ± 11	77,612	0.7% ± 0.01%	42 ± 22	646 ± 13	6.5% ± 3.4%		8.8 ± 4.6
	50+	480 ± 6	102,308	0.5% ± 0.01%	17 ± 13	746 ± 11	2.3% ± 1.7%		5.0 ± 3.6

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Adult Outpatient Mental Health Services Clients 2003 With an Emergency Room Visit for Asthma in 2001 and 2002

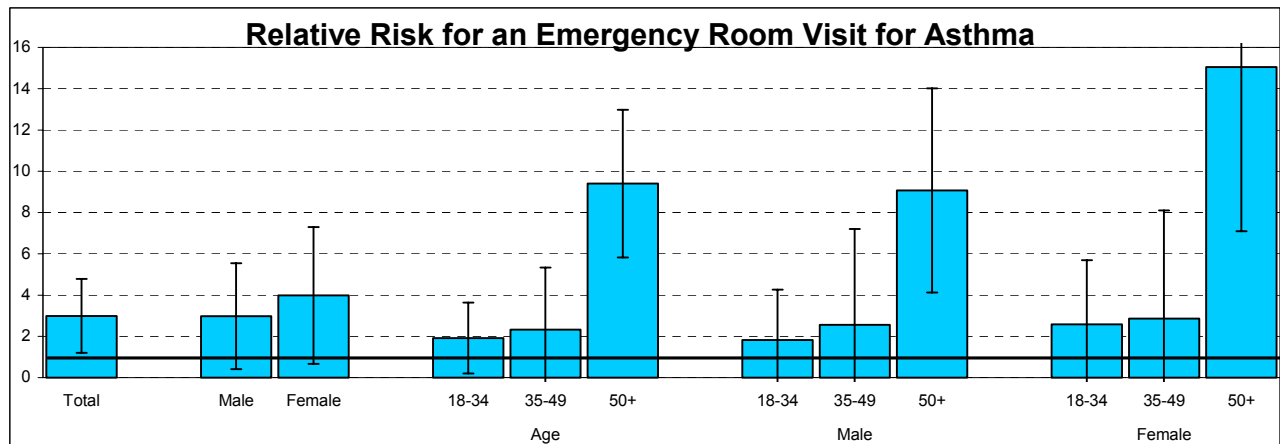
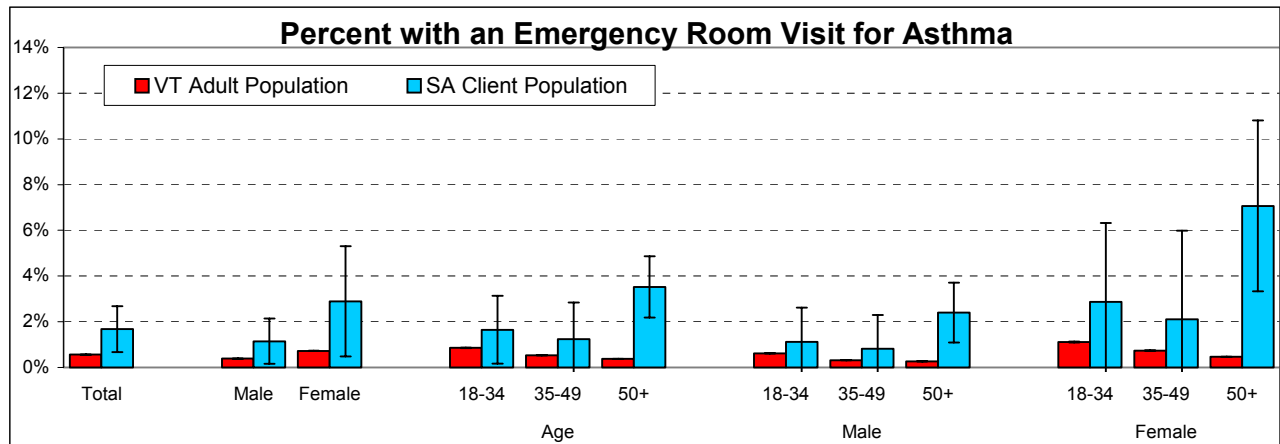


	Total Asthma				Adult Outpatient Services				Relative Risk
	Asthma	Population	Rate		Asthma	MH Population	Rate		
Total	2,681 ± 21	476,998	0.6% ± 0.00%		141 ± 54	6,928 ± 52	2.0% ± 0.8%		3.6 ± 1.4
Male	888 ± 10	230,553	0.4% ± 0.00%		28 ± 26	2,652 ± 28	1.0% ± 1.0%		2.7 ± 2.5
Female	1,794 ± 19	246,445	0.7% ± 0.01%		114 ± 48	4,276 ± 44	2.7% ± 1.1%		3.6 ± 1.5
Age 18-34	1,157 ± 16	134,422	0.9% ± 0.01%		56 ± 40	2,528 ± 34	2.2% ± 1.6%		2.6 ± 1.8
35-49	810 ± 12	151,937	0.5% ± 0.01%		44 ± 33	2,396 ± 34	1.8% ± 1.4%		3.4 ± 2.6
50+	715 ± 7	190,639	0.4% ± 0.00%		42 ± 17	2,005 ± 19	2.1% ± 0.8%		5.5 ± 2.2
Male 18-34	417 ± 8	67,897	0.6% ± 0.01%		19 ± 20	978 ± 18	2.0% ± 2.0%		3.2 ± 3.3
35-49	237 ± 5	74,325	0.3% ± 0.01%		1 ± 15	963 ± 19	0.1% ± 1.6%		0.4 ± 4.9
50+	234 ± 3	88,331	0.3% ± 0.00%		7 ± 6	710 ± 10	1.0% ± 0.8%		3.9 ± 3.1
Female 18-34	739 ± 14	66,525	1.1% ± 0.02%		37 ± 34	1,549 ± 29	2.4% ± 2.2%		2.2 ± 2.0
35-49	573 ± 11	77,612	0.7% ± 0.01%		42 ± 29	1,433 ± 29	2.9% ± 2.1%		4.0 ± 2.8
50+	481 ± 6	102,308	0.5% ± 0.01%		34 ± 16	1,294 ± 17	2.6% ± 1.2%		5.6 ± 2.6

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Substance Abuse Mental Health Services Clients 2003 With an Emergency Room Visit for Asthma in 2001 and 2002

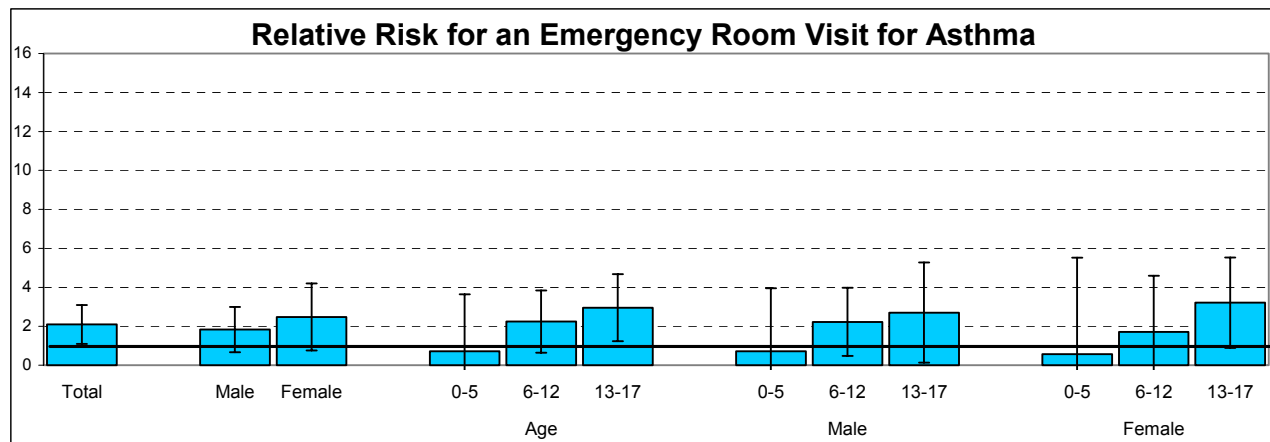
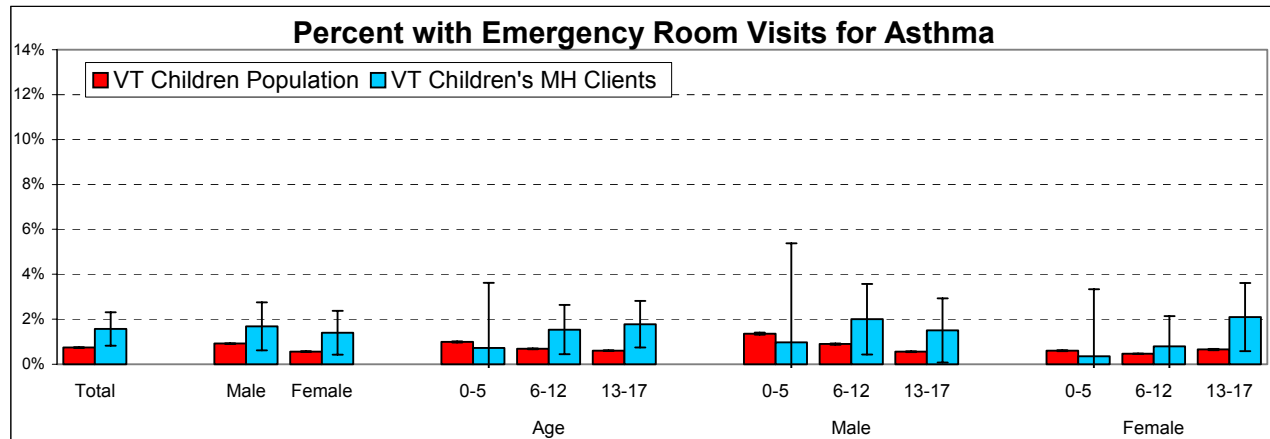


	Total Asthma				Substance Abuse Services				Relative Risk
	Asthma	Population	Rate		Asthma	MH Population	Rate		
		2002				2003			
Total	2,680 ± 21	476,998	0.6% ± 0.00%		74 ± 45	4,420 ± 45	1.7% ± 1.0%		3.0 ± 1.8
Male	888 ± 10	230,553	0.4% ± 0.00%		35 ± 30	3,073 ± 41	1.1% ± 1.0%		3.0 ± 2.6
Female	1,793 ± 19	246,445	0.7% ± 0.01%		39 ± 33	1,347 ± 18	2.9% ± 2.4%		4.0 ± 3.3
Age									
18-34	1,157 ± 16	134,422	0.9% ± 0.01%		41 ± 37	2,479 ± 38	1.6% ± 1.5%		1.9 ± 1.7
35-49	810 ± 12	151,937	0.5% ± 0.01%		19 ± 25	1,533 ± 23	1.2% ± 1.6%		2.3 ± 3.0
50+	714 ± 7	190,639	0.4% ± 0.00%		14 ± 5	408 ± 7	3.5% ± 1.3%		9.4 ± 3.6
Male									
18-34	417 ± 8	67,897	0.6% ± 0.01%		19 ± 26	1,726 ± 35	1.1% ± 1.5%		1.8 ± 2.4
35-49	237 ± 5	74,325	0.3% ± 0.01%		8 ± 15	1,036 ± 21	0.8% ± 1.5%		2.6 ± 4.6
50+	234 ± 3	88,331	0.3% ± 0.00%		7 ± 4	310 ± 6	2.4% ± 1.3%		9.1 ± 4.9
Female									
18-34	739 ± 14	66,525	1.1% ± 0.02%		22 ± 26	752 ± 15	2.9% ± 3.4%		2.6 ± 3.1
35-49	573 ± 11	77,612	0.7% ± 0.01%		10 ± 19	497 ± 10	2.1% ± 3.9%		2.9 ± 5.2
50+	480 ± 6	102,308	0.5% ± 0.01%		7 ± 4	98 ± 2	7.1% ± 3.7%		15.1 ± 8.0

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Children's Mental Health Services Clients 2003 With an Emergency Room Visit for Asthma in 2001 and 2002



		Vermont Children Population			Childrens Mental Health Services			Relative Risk
		Asthma ER Visits	Population 2002	Rate of Asthma	Asthma ER Visits	MH Population 2003	Rate of Asthma	
Total		1,041 ± 15	139,594	0.7% ± 0.01%	130 ± 62	8,331 ± 139	1.6% ± 0.7%	2.1 + 1.0
	Male	658 ± 13	71,691	0.9% ± 0.02%	81 ± 51	4,806 ± 112	1.7% ± 1.1%	1.8 + 1.2
	Female	383 ± 7	67,903	0.6% ± 0.01%	49 ± 34	3,525 ± 83	1.4% ± 1.0%	2.5 + 1.7
Age	0-5	388 ± 10	39,063	1.0% ± 0.03%	6 ± 25	863 ± 23	0.7% ± 2.9%	0.7 + 2.9
	6-12	384 ± 8	55,844	0.7% ± 0.01%	57 ± 41	3,732 ± 89	1.5% ± 1.1%	2.2 + 1.6
	13-17	270 ± 7	44,687	0.6% ± 0.01%	67 ± 39	3,737 ± 105	1.8% ± 1.0%	3.0 + 1.7
Male	0-5	274 ± 9	20,132	1.4% ± 0.05%	5 ± 23	517 ± 20	1.0% ± 4.4%	0.7 + 3.2
	6-12	257 ± 7	28,644	0.9% ± 0.03%	46 ± 36	2,304 ± 76	2.0% ± 1.6%	2.2 + 1.8
	13-17	128 ± 4	22,915	0.6% ± 0.02%	30 ± 28	1,985 ± 79	1.5% ± 1.4%	2.7 + 2.6
Female	0-5	115 ± 4	18,931	0.6% ± 0.02%	1 ± 10	346 ± 12	0.3% ± 3.0%	0.6 + 4.9
	6-12	127 ± 4	27,200	0.5% ± 0.01%	11 ± 19	1,427 ± 45	0.8% ± 1.3%	1.7 + 2.9
	13-17	142 ± 5	21,771	0.7% ± 0.02%	37 ± 26	1,752 ± 69	2.1% ± 1.5%	3.2 ± 2.3

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